

**SILICON WAFER BASED MACROSCOPIC MIRROR FOR WIDE ANGLE
SCANNING APPLICATIONS
ABSTRACT OF THE DISCLOSURE**

A macroscopic mirror for wide angle scanning applications comprises: a silicon substrate section of a predetermined shape and macroscopic size cut from a silicon wafer comprising a flat, polished surface side and an etched, rough surface side; and a plurality of layers, including a layer of reflective medium, disposed on the flat, polished surface of the substrate section in such a manner to minimize flexural distortion of the flat surface. The macroscopic mirror is made by a method comprising the steps of: preparing the silicon wafer by polishing one side to a predetermined flatness and etching the other side to a predetermined roughness; cutting the substrate section from the prepared silicon wafer to a predetermined shape and macroscopic size; and applying the plurality of layers on the flat, polished surface. The macroscopic mirror is included in a mirror system wherein the rough surface side is bonded to supporting arms of a drive mechanism which scans the mirror at a predetermined scanning rate in at least one plane of rotation.